



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

A.2

Mary A. Gade, Director
217/782-6760

2200 Churchill Road, Springfield, IL 62794-9276

January 29, 1993

AIRBORNE EXPRESS
FACSIMILE

Mr. Michael J. Radcliffe
Harnischfeger Industries, Inc.
13400 Bishops Lane
Brookfield, Wisconsin 53005

EPA Region 5 Records Ctr.



255178

Refer to: L2010355004/ Winnebago County
Beloit Corporation/ Rockton
Superfund/Technical

Dear Mr. Radcliffe:

The IEPA has reviewed the Draft Technical Memorandum for Phase I of the Remedial Investigation at the Beloit Corporation Superfund Site. This document has been disapproved as outlined in Section XV,B,2 of the Consent Decree. Enclosed are comments concerning review of this document.

The IEPA would appreciate Beloit Corporation's response to the comments as outlined in Section XV,B,3 of the Consent Decree. If problems are anticipated in response to the comments provided by the IEPA, please contact me at (217) 782-6760.

Sincerely,

Eric D. Runkel, Project Manager
Federal Sites Management Unit
Division of Remediation Management
Bureau of Land

cc: Paul Jagiello, IEPA, w/attachments
Susan Horn, IAGO, w/attachments
Wayde Hartwick, USEPA, w/attachments
Dorthia Downs, Ebasco, w/attachments
Andrew Perellis, Coffield, et.al., w/attachments
Kevin Domack, Warzyn, w/attachments
Division File



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

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The following are comments on the Technical Memorandum for Phase I of the Remedial Investigation being conducted at the Beloit Corporation Superfund Site. References will be made as to Section (S), Paragraph (@), Line (L), Page (P), Table (T), Figure (F), Drawing (D), and Appendice (A). Reference made to paragraph (@) is for the first full paragraph on the page or section.

S1,P1-1,@1,L2-

This sentence should be corrected to "...summarized in ~~the SER various technical documents~~ and..." . There are references to multiple collections of data for consideration in this document. There is a reference in Section 2.2.1,@1,L2 concerning the collection of information considered in this section of the document.

S1.1,P1-2,@3,L1-

The reference to the "Agency" should be corrected to the IEPA. This will accurately describe the role of the appropriate "Agency" involved with the remedy. Also, refer to S1.1,P1-2,@3,L5 for correction.

S1.2,P1-2,@2,L1-

This sentence should be corrected to "... of the RI ~~was~~ is to gather data...". This should also be corrected for S1.2,P1-2,@3,L1.

S2,P2-1,@1,L2-

This sentence should be corrected to "...site conditions, ~~to assist the reader in developing a better understanding of the site and the practices which led to the site being listed on the NPL.~~". This is a subjective statement and should not be incorporated into this document.

S2.1.2,P2-1,@1,L2-

Soterion is identified as "United Recovery/Soterion Facility" on Drawing F1. The property should be identified as either Soterion or United Recovery throughout this report to minimize confusion.

S2.1.3,P2-2,@3,L5-

This sentence should be corrected to "...between the ~~plant~~ BCP and the BCRC..." for clarification.



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S2.1.3, P2-2, @3, L5-

This sentence should be corrected to "... BCP and ~~Watts Avenue~~ the railway". There is no connection between the asphalt parking lot and Watts Avenue.

S2.2.1, P2-2, @2, L5-

This sentence should be corrected to "...groundwater quality study of the ~~entire~~ area in the vicinity of the Soterion and Beloit Corporation properties.". This is not an accurate depiction of the scope of preceding investigations. There has been no definitive historical groundwater study for the "entire" area. The on-going RI is intended to be the determining investigation into the groundwater quality of the "entire" site.

S2.2.1, P2-3, @1, L1-

This sentence should be corrected to "... the IEPA to investigate the property ~~on several occasions~~ from 1980 through 1982.". This statement is subject to interpretation and may be considered discriminatory.

S2.2.1, P2-3, @1, L8-10-

The sentence "However, these VOC..." is drawing a conclusion based on conjecture. If historical QA/QC information presented in this document is to be interpreted, then all presented historical data would require interpretation on validity. Since this would be beyond the scope of this document no interpretation on QA/QC should be permitted for historical data utilized for discussion. This sentence should be deleted from this document on this basis.

S2.2.1, P2-3, @6-

This paragraph has no reference(s) to documentation for these results.

S2.2.1, P2-4, @3, L8-

This sentence should include results of VOCs that were detected and respective concentrations.

S2.2.1, P2-5, @1-

The name An Investigation of Volatile Organic Chemical Contamination in Groundwater Near Rockton, Illinois (IEPA-March 1988) should be included into this paragraph to reference the material utilized.



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S2.2.1, P2-5, @3, L5-

This sentence is misleading. Why would low concentrations of VOCs prevent Warzyn from drawing conclusions regarding sources (or the lack of) at Soterion? If questions of QA/QC are involved refer to comments on S2.2.1, P2-3, L8. This sentence should be deleted or presented in an accurate manner.

S2.2.1, P2-6, @4, L12-

This sentence should be corrected to "The report summarized that a VOC source may be located near standpipe SP4 and boring B4.". This would alleviate any confusion over conclusions from the original report and not this document.

S3.2.1, P3-2, @2, L14-

This sentence should be corrected to "...lacustrine clays, silts and sands.". This is supported by the clays discovered in the geology during Phase I.

S3.3, P3-4, @1, L4-

The descriptions of the high capacity production wells at the Beloit Corporation facility and the municipal well at Village of Rockton drawing water from the a bedrock aquifer appears to contradict the screen placement in the well logs supplied in Appendix A and D. Also, drawing F4 shows production well 441K, but no well log showing screen placement is available for comparison. The source of water drawn from these wells appears to be the glacial deposits above the bedrock. The impact these wells have on the hydrogeology within the site will have to be further evaluated in future investigation. Refer to S5.2.5, P5-10, @1 for further discussion on this topic.

S4.1, P4-2, @3-

This paragraph does not explain the absence of analytical results for monitor wells W1, W2, W6, W7, W9, W10, G101, and G103S.

S4.1, P4-2, @4-

The recommendations for monitor wells in this paragraph are strictly the opinion of Beloit Corporation and are subject to future determination. Also refer to S.4-1, P4-3, @1.



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S4.2, P4-3-

There is no reference on Drawing F1 to the location of the abandoned wells described in this Section. This discrepancy should be corrected in this Section or on Drawing F1.

S4.2, P4-3, @1, L2-

The word "sampled" has the "d" in bold type. Is there an explanation as to the significance this has on the document?

S4.2, P4-3, @4, L1-

The date of abandonment for these wells found in Appendix B is August 4, 1992.

S4.3, P4-4, @2, L4-

This sentence should be corrected to "Each 200 series sample...". This would alleviate any misinterpretation of the data.

S4.4, P4-7, @4-

Were there any exceptions as to the collection of cuttings with a PID reading below 5 ppm in 55 gallon drums for disposal at a later date? If so, an explanation should be provided in this Section.

S4.8, P4-9, @1, L1-

The reference to "Fifty three private water supply wells..." and drawing F1 do not coincide. There are only 21 private water supply wells located on drawing F1. Please provide a factual statement to this Section accurately depicting information on drawing F1.

S4.11, P4-11, @1, L6-

The statement that "actual" total depths were determined by stratigraphy and sample screening appears incorrect. The "actual" total depth can only be determined within a specific degree of confidence utilizing these methods. This Section should explain the reasoning behind utilizing these methods to conclude what is recognized in this document (but may not be supported by practical methodology) as the "actual" determined total depths.



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S4.15,P4-15,@5,L2-

The word "minutes" has the letters "utes" bold in this document. Is there an explanation as to the significance this has on the document?

S4.15,P4-16,@2,L6-

This sentence should be corrected to "...their oversight ~~contraction~~ contractor (Ebasco)...".

S5.1.1-

This section does not provide a summary of the results from the geophysical survey. This Section restates the results of the work done in Appendix F almost verbatim. This was not the intention of this document. This Section should be revised to reflect a summary of results obtained from information provided in Appendix F. Also, measurements should be presented in feet rather than coordinates to provide a more accurate understanding of the findings.

S5.2.1,P5-4,@1,L3-

This sentence should include "...construction, disposal and land application of sludge from the R&D facility, and disposal...".

S5.2.3-

This Section should be corrected to include discussion of the lower aquifer. There is information from this (and previous) investigation that provides evidence that the lower aquifer has shown contamination and may be a migration pathway. Also, because physical and chemical characteristics of the potential source(s) have not been determined and may have an influence on the transport/migration mechanisms which could allow for introduction of contaminants into the lower aquifer at this site, it would not be acceptable to exclude this area from the investigation. This Section should be revised to include discussion on the lower aquifer.

S5.2.4.1,@1,L4-

This sentence should be corrected to "...depth to water appears to increase non-uniformly from west to east...". Due to the highly variable flow patterns in any one direction, at any one period, at any one point within the site area, it



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would be presumption to assume that groundwater depth exhibits uniform distribution from west to east across the site. There is reference to the complexity of the groundwater flow in S5.2.4.1,@2,L1 and S5.2.4.3.

S5.2.4.1,P5-7,@1,L5-

This sentence should be corrected to "...the August measurements, ~~probably~~ possibly in response to recent precipitation.". The hypothesis that precipitation influences water levels for these periods is not supported by factual documentation. No record of precipitation for these periods is recorded in this document for comparison with average precipitation for the area. Also, as stated in the following sentence, insufficient data exist for seasonal water level comparison. Statements that cannot be supported by recorded information available in this document (or referenced to the appropriate material) should not be presented as probabilities.

S5.2.4.1,P5-8,@1,L2-

The reference to a "...groundwater trough..." possibly existing in the hydrogeology for this site has not been established. Interpretation of the data available may provide a hypothesis for more clearly defining the influences on this site-specific groundwater flow. This sentence should be corrected to "...is toward ~~the~~ a possible "groundwater trough" to the southwest.". Also, refer to S8.3,P8-2,@1,L4 and S8.3,P8-3,@5,L5 for discussion.

S5.2.4.2,@1,L8-

The ranges utilized in this document to categorize lithologic types of soil for the site are not inclusive for variables involved when classifying soil by hydraulic conductivity. An example would be the classification of silty sand by the hydraulic conductivity of 9.6×10^{-6} for well G103S. This description of the soil type for this particular well appears questionable as to accuracy. Other areas of hydraulic conductivity and there description within the range of lithological types should also be scrutinized as to accuracy (i.e. W-13).

S5.2.4.3.1,P5-9,@1,L2-

Refer to sentence "...along a ~~small~~ region that includes monitoring wells W23B, W22C, W14, and W27...". The



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interpretation that this configuration is a "small region" is misleading. This area consist of a cross-section of essentially the entire site. Also, monitoring well W27 is not included in any cross section drawings provided in this document.

S5.2.4.3.1,P5-9,@1,L6-

The sentence "...conductivity of this unit (Table 5)..." should be corrected to included the proper reference to a formally recognized "unit" within the site. The description of a "unit" needs clarification or rewording to a correct reference within this document. Do to the highly variable circumstances influencing the hydrogeology at the site, it would be presumptuous to make a blanket statement regarding groundwater flow for an area of such great concern (i.e. potential migration pathway[s]). Further evaluation and comparison to additional studies will have to be scrutinized to better understand the complexity of all the mechanisms working to influence the groundwater in the area.

S5.2.4.3.1,P5-9,@2-

To assume that a "...constant flow rate (Q)..." exists over any given area at any given period within this site is presumptuous. Flow rates appear to be variable upon multiple factors not the least of which is seasonal fluctuations regarding water tables, a variable not expounded in this document. The use of Darcy's Law must be presented with the realization that it may not provide an actual depiction of the probabilities regarding the overall groundwater movement as it compares to differentiated periods of time. Therefore, the use of Darcy's Law may provide results reflective of one particular moment on the site, however, information shown in this document suggests that water table configurations are ever changing as natural and unnatural mechanisms influence the groundwater patterns. Also, the assumption that groundwater is moving consistently through "...fine grained deposits..." is not accurate in depicting the variable lithology of this area. Therefore, it is concluded that the accuracy of Drawings F6 and F7 have not been substantiated by certain assumption utilized in this document. The use of Drawing F6 and F7 should be regarded as a theoretical tool and not as the absolute factual depiction of constant events occurring within the site regarding groundwater flow. See subsequently comments on Drawing F6 and F7 for further discussion.



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S5.2.4.3.2, P5-9, @1-

The data provided for computation of Horizontal Groundwater Flow Rates have not been substantiated as to validity. Do to the large range of numerical values demonstrated by the hydraulic conductivity survey conducted at this site and their relations to variables exhibited by specific soil types within specific ranges, a computed mean may not provide the overall effects of these variables on "average" linear groundwater flow velocity. Also, the assumption that "porosity" is "0.25" cannot accurately depict "average" conditions concerning the complexity of the hydrogeology for this area. No reference is made as to methods utilized to achieve the numerical certainty concerning data sets utilized in this computation, therefore, the reliable of this equation providing an "average" flow velocity should be discussed with qualification as to deficiencies. This may assist in providing a better understanding of the equation and its application in the investigation. Additional computations using statistical probabilities and their employment for justifying results of this equation should provided a more accurate depiction of "average" linear groundwater flow velocities.

S5.2.4.3.3, P5-9, @1-

This Section does not explain the large variation between the vertical gradients for August and September exhibited by W23/W23B. This difference should be interpreted in this Section. See "Comments on Drawing F6 & F7.

S.5.2.5, P5-10, @1-

This Section has no reference to well installation reports for 441L or 441K. The well log for 441k in Appendix D does not appear complete. The City of Rockton Well #5 is not in Appendix D, but may be in Appendix A as Rockton No. 1-56. Also, the pump test done on this well was 1500 gpm (as shown in Appendix A). The reference in this Section is that production of this well is 500 gpm. This discrepancy should be explained. Further evaluation of the impact of these production wells on the site will have to be studied in future investigations.

S6.1.3.1, P6-2-

The compounds presented should have a more detailed description of uses in industry. There should also be a discussion of compounds utilized in the production processes at Beloit Corporation. There is also a need for discussion on



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the toxicity of the chemicals of potential concern in this Section.

S6.1.3.1,P6-2,@3-

The reference to "...a potential degradation sequence." should be clarified to illustrate which products are primary compounds and which products may be degradation compounds to avoid confusion in this Section or in S7.1.3,P7-3.

S6.1.4,P6-3,@1,L2-

The sentence "A range of 2 times the average is considered representative of background levels." is incorrect. This comparison is made throughout the document and cannot be considered accurate for correlation. There are guidelines by which background levels can be statistically derived to insure an accurate representation for comparison. The Work Plan called for data utilized in the Risk Assessment to be developed according to guidelines outlined in U.S. EPA's RI/FS Guidance: "Interim Final Risk Assessment Guidances (RAGs) for Superfund", US. EPA's "Integrated Risk Information System" (IRIS), as well as updates to these documents, data bases, or additional RAG volumes (refer to Section 2.3, page 2-2, Volume I, June 1992 of the Work Plan). This Section, as well as any correlations made throughout the document, will have to be re-assessed utilizing the correct background comparisons.

S6.1.5,P6-4,@1-

This Section is not accurate. Comparisons are not in agreement with the majority of the CLP laboratory results. In fact, most of the results were in significant contrast to laboratory analytical results. The use of one high field result comparison to its CLP analytical counterpart does not support scientific evidence that accuracy and precision for field screening provide "an acceptable degree of confidence". On the contrary, field screening activities produced evidence that sampling methods utilized in Phase I may not have provided an accurate representation of contamination at the site. There are statements in this document of the inability of field screening results to support a qualitative statement of accuracy (refer to Section 6.1.7,P6-5,@4 & @5).

S6.1.6,P6-4,@3-

This Section should be expanded to include a isoconcentration Drawing of boundaries of specific and



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theoretical source areas within the SYA. Also, the last sentence should give the results of "... lower concentrations of these compounds." to clarify concentrations in the SYA.

S6.1.6, P6-4, @4, L1-

The location of "... the lean-to..." is misleading. The location should be corrected to "...the lean-to approximately the midpoint of the south perimeter of the BCP..." to clarify reference within this document. There is no reference to "the lean-to" location in this Section and may lead to a misunderstanding of the investigation around the BCP. Also refer to S6.1.7, P6-6, @3, L1 for correction.

S.6.1.6, P6-5, @3-

This statement may be misleading. Of the 15 soil gas samples collected only one was actually taken from the FSDA. Only six (SG7, SG8, SG10, SG12, SG16, SG17, and SG18) appear to be within the vicinity of the FSDA. The remaining eight soil gas samples do not appear to supply an accurate depiction of the area in or around the FSDA. This statement should be revised to present an accurate depiction of the relevant soil gas samples presented as they pertain to the FSDA.

S6.1.7, P6-5, @3, L2

This sentence needs to be corrected to "...well nest W22 and Well W12, ~~this boring lies between the BCP and wells W18 and W26C all of which showed contamination by chlorinated VOCs.~~" This appears to be a conclusion that there is no connection between contamination at the BCP and contamination discovered in W18 and W26C. This is not an accurate characterization to utilize in this document. Because no migration pathway has been detailed between possible source areas and contaminated groundwater samples a discussion on the possible elimination any one area within this site as not be related would be presumptuous. Therefore this statement is not be conducive to future investigations. See "Comments Summary".

S6.1.7, P6-5, @5-

The results in Table 6-2 shows contamination at the 50', 100', 111', 139', 149', and the 159' levels. The result for the sample retrieved by the bailer at 159' was 0.3ug/L. Therefore, this compound may be found at this depth and the detection at this depth below 0.8ug/L may be accurate. 1,1,1-TCA contamination at the 111' and the 139' were 5.1 ug/l and 8.3



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ug/L, respectively. These results should be significant in the evaluation of the area for this boring and have not been explained in this Section. As seen in Table 6-2 these results are not estimated "J" values and should be considered accurate for the area at these depths. An explanation should be expounded in this Section for results not of an estimated value.

S6.1.7,P6-5,@6-

The statement "Concentrations generally increased with depth,..." does not apply accurately for the results of TCE. The results in Table 6-2 for TCE appear not to have a clearly defined relationship to each other as they pertain to depth. This statement should be rewritten to accurately depict events occurring for DB4.

S6.1.7,P6-5,@6,L2-

The statement that results of DB4 are "similar" to the results of W26C is incorrect. The results for W26C showed 61ppb of PCE and 16ppb of 1,1,1-TCA. The GC results were reported at considerably lower levels for the same compounds. This sentence should be corrected or deleted from this Section.

S6.1.7,P6-6,@1,L2-

This sentence should be corrected to "Benzene and toluene were also detected at concentrations less than 1ug/L at a 39 ft. depth."

S6.1.7,P6-6,@2,L2-

The sentence should be corrected to "...in the soil sample SB08 located in Table 6-3, which..."

S6.1.7,P6-6,@2,L3-

The last sentence in this paragraph appears to make a connection between an area of potential source contamination (i.e. Soterion) affecting an area of receptor populations (i.e. private wells). The contamination in the private water wells located in the Blackhawk Acres Subdivision may be explained by the detections in other soil borings of 1,1,1-TCA. Also, 1,1,1-TCA was found in the pump blank at DB3 and in many wells on the site. The last sentence should be deleted from this document to avoid confusion with other possible source areas.



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S6.1.7, P6-6, @4-

This paragraph should be more detailed in the description of concentrations found in W23B. Because of the significantly elevated levels of contaminants found in this well (as compared to other results for groundwater analysis), there should be a listing of concentrations detected, depths, and their significance and relevance to this location.

This is the goal of the RI. Therefore, scrutiny of levels detected in W23B must be elaborated upon in this document to support further investigations. Also, a discussion of dilution factors should be explained to inform the reader that results reported for W23B (and W23) were unique for these particular well nest groundwater results. An explanation as to the dilution factor and their significance in reporting results for this document must be addressed either in this Section, Section 8, or Appendix I.

S6.1.7, P6-6, @5-

This statement does not explain the significantly elevated levels for PCE at W23 and its relationship to location and the results relevance to this investigation. W23 should also have a discussion to dilution factors and their relevance to well W23 (and W23B) test results (see S6.1.7, P6-6, @4 for further discussion on this topic). Also, refer to comments on S6.1.5, P6-4, @1 for discussion on field GC comparisons. This sentence should be deleted from this document.

S6.1.8, P6-6, @1

The Section titled "Soil Analytical Results" does not discuss the validity of utilizing two background sample (SUSG107-00 and SUW24-00) as representative of the site. Two background samples do not provide a definitive representation of the true nature for soil within the site. And in Table 6-3, 6-6 only one background level is used for comparison. Therefore, any conclusions drawn in this Section concerning comparisons to background levels may not be acceptable. Also, the identifications for the background samples appears to show the samples coming from a soil gas (SUSG) and a water (SUW) medium. This may lead to a misunderstanding of methods utilized to determine background level comparisons to soil samples. Discussion of background levels will have to be reviewed as to corrections required to obtain acceptable comparison data for utilization within this document.



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S6.1.8.1, P6-7, @1-

The results for SB13 should be included in this paragraph to show that SVOCs were located at two separate locations within the FSDA.

S6.1.8.1, P6-7, @1, L6-

The statement that BEHP is a laboratory contaminant is not discussed as to validity by comparison to the field and lab blank results in this document. An explanation as to what results were found in the blanks should be presented in this Section to support the hypothesis. Any subsequent comparisons to "laboratory contaminants" for any compound in this document will need to be supported by statistical qualification to related field and lab blanks. There are specific guidelines presented in the RAGS (refer to S6.1.4, P6-3, @1, L2) addressing the validation of results as "laboratory contaminants" through statistical probabilities of comparison to data provided in field and lab blanks. QA/QC validation of results in this document have not been determined at this time (see "Comment Summary"). Any comparisons within this document to "laboratory contaminants" should not be considered accurate until appropriate information and discussion is provided supporting the hypothesis.

S6.1.8.1, P6-7, @2, L3-

The reference to "Aroclor-1260" should be relocated to to the first line in this paragraph to denote it as a PCB.

S6.1.8.1, P6-7, @3-

This paragraph explains the CRQL as an instrumental detection limit procedure utilized in supplying analytical results with a degree of confidence. The CRQL is an acceptable detection limit procedure as set forth in the Work Plan. However, to utilize detections below the CRQL as a governing entity to support conclusions within this document would be presumptuous. To consider detection of compounds, below this detection level, significant or insignificant within a specific area based only the CRQL is not acceptable. The CRQL should be utilized as a guide and not a standard by which conclusions are based (especially as a reference to "low concentrations"). These conclusions based on comparison against the CRQL may delude accurate interpretations intended within this document. As stated in this Section, reported limits below this level are considered "estimates". The use of



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CRQLs for interpretation are discussed in the RAGS (see comments on S6.1.4,P6-3,@1,L2 for details). See S6.1.8.2, S6.1.8.3, S6.1.8.5, S6.1.8.8, S6.1.9.1, S6.1.9.2, S6.1.9.3 for correction.

S6.1.8.1,P6-7,@4-

Concentration levels for the metals found in the FSDA should be presented in this paragraph. This would assist in interpretation and comparison to other results presented in this Section.

S6.1.8.2,P6-7,@1,L6-

The sentence "Concentrations appear to increase with depth." is misleading. Concentrations for three of the six VOCs detected (Table 6-3) show a decrease with depth. And all VOCs show an absence from initial sampling at "00" feet. This sentence should be deleted.

S6.1.8.3-

This Section is supporting a conclusion that this area is not a contaminant source based on comparison to questionable information (i.e. CRQL, background levels, and laboratory contaminants). This Section should be re-evaluated and subsequently re-written to reflect accurate interpretation of results. See comments on S6.1.8.1,P6-6,@1; S6.1.8.1,P6-7,@1,L6 and S6.1.8.1,P6-7,@3.

S6.1.8.4,P6-8,@1,L4-

This sentence should be corrected to "It appears ~~discontinuous~~ that an area or areas of soil contamination may exist...". The statement that soil contamination appears "discontinuous" is not supported by the soil gas results found in Table 4-1 and Table 6-1. These results show concentrations may exist over one large area in the SYA. Further evaluation of the SYA should be conducted in subsequent investigations.

S6.1.8.4,P6-9,@2-

The concentration levels for metals found above background should presented in this paragraph for comparison.



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S6.1.8.5,P6-9,@1,L2-

This sentence should be corrected to "PCE was found ~~in surface soil~~ from SB21 at 4 ug/kg in the surface soil and 3 ug/kg at 90'.".

S6.1.8.5,P6-9-

A discussion of the visual characteristics for the soil sampled in this area should be included in this Section. The significance would be that the majority of the contamination discovered in the soil occurred in "fill" material recovered from this area

S6.1.8.8,P6-10,@3-

Since the metal results for copper and mercury are noted as elevated they should be expressed as concentration levels in this Section.

S6.1.9,P6-10,@1,L4-

There is no mention of the private wells sampled at 900 and 903 Prairie Road in this Section. These wells are not located in the Blackhawk Acres Subdivision. There should be a reference to these wells in this Section.

S6.1.9.1,P6-11,@3,L4-

The wells where MCLs were exceeded for PCE and TCE should be expressed as to location within the site.

S6.1.9.1,P6-11,@5,L5-

The results for the "one well" that exceeded background levels should be identified and reported as concentration levels in this Section.

S6.1.9.1,P6-12,L2-

The reference to "road salt" as being a possible contaminant cannot be ruled out. However, emphasis should be place on examining "other material" as potential contaminants. The elevated results for metals are either very high or absent from "road salt" constituents. Also the factor that this sample was taken during the summer months may lend evidence that "road salt" did not significantly contribute to the high concentration exhibited by W15. However, no conclusions



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should be excluded concerning possible contamination in this area at this time. Further investigation will be required in this area.

S6.1.9.2,P6-12,@2-

There is no mention anywhere in this Section for concentrations of VOC contamination at W23B, W20B and W05R even though these wells had exceedances of MCLs (i.e. W23B had a reading for PCE of 970ppb). These wells should be defined in this Section as to contaminants present, concentrations, locations, and the exceeded MCLs. Also, a statement that W23B exceeded the MCLs for 1,2-DCA with a concentration of 320ppb should be included in this Section.

S6.1.9.3,P6-13,L1-

This paragraph should be re-written to show the wells that exceeded MCLs for TCE. This should include locations of W18 and W26C and there relationship to the site.

S6.1.9.3,P6-13,@4,L2-

This sentence should be corrected to "These wells are located ~~west of Seterion~~ on the Beloit Corporation boundary, east of the FSSA". This provides an accurate description of the location of W18 and W26C.

S6.1.9.4,P6-13,@1,L5-

The reference to "Drawing F9" appears to be incorrect. This information is located on Drawing F8. There is no Drawing F9 in this document.

S7.1.2,P7-1,@1,L3-

This sentence should be corrected to "...relatively immobile and will ~~not~~ resist being leached or transported."

S7.1.2,P7-2,@3,L5-

This sentence should be corrected to "...and provide ~~conservative~~ liberal estimates of the effective rate of transport...". This can be substantiated by the evidence presented in this document that show soil characteristics within this site exhibit tendencies to form unique hydrogeological patterns dictating a non-distinctive situation which cannot be assumed uniform for any one area.



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Therefore, interpretations drawn from utilization of the retardation factors will have to be examined with a degree of reasonable doubt as to validity when discussing transport of contaminants.

S7.1.4, P7-4, @1, L7-

The statement that soil gas results will provide evidence of volatilization is basically accurate dealing in ideal conditions. However, do to the unique nature of the hydrogeology and taking into consideration the complex mechanisms influencing contamination within this site, limitations must be recognized which may have adversely affected the performance of the soil gas results used in this study. This must be taken into account when attempting to properly define the source (or sources) and related parameters of contamination within this site.

S7.2-

There is no information in this Section concerning SVOCs, PCBs or pesticides. There needs to be an explanation for their absence or discussions provided of their relationship in this Section.

S7.2, P7-5, @1, L3-

This sentence should be corrected to "Possible sources of contamination have been located at the BCP ~~in the vicinity of well nest W23, and Soterion, FSDA, and the SYA.~~". The chemicals of potential concern at this site should be the chlorinated VOCs. Only aromatic VOCs were reported at Soterion. Also, the source(s) may be located in other areas associated with BCP and not specifically at well nest W23. This document has reported chlorinated VOCs in sample results located in the SYA and the FSDA. See S8-4, P8-2.

S7.2, P7-5, @1, L4-

This sentence should be corrected to "The presence of possible additional sources, ~~particularly that of chloroform in the north half of the Blackhawk Acres Subdivision,~~ are unknown.". This is supported by evidence of aromatic VOCs and metals at Soterion, PCBs found on site, concentration levels of various compounds at the FSDA, and contaminants found at W15. Chloroform is of concern, however it should not be singled out as the only area in question. See S8-4, P8-3.



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S7.2.1, P7-5, @2, L2-

This sentence should be corrected to "The fact that groundwater flows ~~to the south beneath~~ away from the BCP and that GC screening results for well W28 were ~~clean~~, indicates ~~the~~ a source (or sources) for VOC contamination in this area lies beneath the ~~extreme western section of~~ BCP building. This revision can be substantiated by the evidence presented in this document. Not only is the well nest W23/W23B showing significant levels of VOC contamination, but soil gas SG32 and the soil boring SB21 showed notably elevated levels of VOCs. SG32 and SB21 results should be discussed in this Section. Also no results are identified in this document to any sampling completed on W28.

S7.2.1, P7-5, @2, L5-

There may be other explanations for 1,2-DCA being discovered in W23B. Under anaerobic conditions PCE may degraded into 1,2-DCA while certain quantities of PCE may remain as original constitutes. Therefore, the source may be a considerable distance from the perimeter of the BCP and particular sources may be degrading to other compounds as they leach into the groundwater. Also, unique chemical and physical characteristics of degradation products differ from their primary compounds, therefore exhibiting dissimilar transport properties. It could also be theorized by the concentration found in this well nest that dNAPLs may be present in or near these wells and are providing a different set of mechanisms by which contaminants are migrating away for the source area. Also, the detection limits in Appendix I for W23 appears to be almost 5 times the detection limit for W23B. This is not to rule out the possibility of multiple sources of differing composition under the BCP. An explanation furnishing alternative interpretations for 1,2-DCA results in W23B and the differences in detection limits utilized in the analytical results should be provided in this Section or in Section 8.

S7.2.1, P7-5, @3, L1-

The use of the water table Drawing 6 & 7 may not be accurate to support hypothesis drawn in this document. Refer to "Comments Drawing 6 & 7".



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S7.2.1, P7-5, @3, L8-

This statement, eliminating the lower aquifer as a potential migration pathway, should not be included for a consideration in this document. All the variables influencing the hydrogeology and groundwater patterns for this site have not been conclusively examined. Also, the statement that no VOCs have been detected below the clay layer is not supported by results on DB4 showing toluene at a depth of 103' in Table 6-2. This depth appears to fall below the clay layer as demonstrated by the well log for W26C/DB4 in Appendix D2. Therefore, to make the assumption that contamination is confined to the upper aquifer exclusively is presumptuous. Evidence in this document showing contamination has occurred in the lower aquifer should invoke further study into this area as a possible migration pathway. Refer to comments on S5.2.3.

S7.2.1, P7-6, L2-

This sentence does not accurately depict the order of the wells as they relate to decreasing concentrations away from well nest W23/W23B. Also, this chronological digression away from well nest W23/W23B is not supported by the higher concentrations found at W5R and G104 as they relate to their position of preceding wells in the theoretical line of divergence. This paragraph should be corrected to accurately describe the events hypothesized in this Section.

S7.2.1, P7-6, @1, L2-

The statement that a "...lack of VOC detections in the water quality boring DB2, DB3 and..." is incorrect. Table 6-2 shows detections of 1,1,1-TCA in DB3. This sentence should be corrected to accurately present the information available for interpretation.

S7.2.1, P7-6, @1, L3-

This sentence should be corrected to "...it is may not be possible to identify determine...".

S7.2.1, P7-6, @1, L4-

This sentence should be corrected to "Further evaluation of the Blackhawk Acres Subdivision, Soterion, and Beloit Corporation's BCP, FSDA, and SYA may be necessary...".



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S7.2.2,P7-6-

The Title for this Section should be corrected to reflect the references to metals in groundwater.

S7.2.2,P7-6,@1-

There were metals found at significant levels (as reported in multiple sampling results in this document) throughout various locations at the site. This should be discussed in this Section to accurately describe current conditions and assist in providing information for possible future investigation at the site.

S7.2.2,P7-6,@1,L6-

This sentence, relating to chromium found during the Phase I investigation, does not relay conclusive detail on the relevance of the information being presented. Elaboration on exact details concerning what this statement is attempting to interpret is needed for this Section.

S7.2.2,P7-6,@2,L7-

This sentence should be corrected to "Cyanide was not detected downgradient at W29~~and~~ G108D.". There is not data on W29 supplied in this document. Also, there is no material on G108S, therefore the reference in this Section must be to G108D.

S8.1,P8-1,@1,L5-

This sentence should be corrected to "...a large buried metal object in close proximity to Watts Avenue , which may be associated with some type of utility, city water, or sewer.".

S8.3,P8-2,@1,L2-

This sentence should be corrected to "...in the formation of ~~the~~ a "groundwater trough"". This will reflect the understanding that a "trough" effect is a hypothesis that has not be corroborated as the suitable description of events occurring within the groundwater system for this site.

S8.4,P8-3,L2-

The sentence, Chlorinated VOCs were found at the highest concentration levels in groundwater monitoring wells located at well nest W23/W23B, adjacent to the southwest



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corner of the BCP., should be included in this paragraph to accurately differentiate VOC results and avoid possible confusion with aromatic VOCs (see S8.4,P8-3,L5).

S8.4,P8-3,L5-

This sentence should be corrected to "Soil sample aromatic VOC results were generally highest in samples from the Soterion area, although concentrations were below MCLs and the compounds detected here differ from those found elsewhere at the site.". This would provide a more accurate description of results provided in this document.

S8-4,P8-3,@2,L5-

This sentence should be corrected to "...characteristics of the compounds is questionable a subject of further investigation.". This may be substantiated by other contaminates discovered in "fill areas" across the site. This may explain the detection of these compounds at depth.

S8-4,P8-3,@3,L2-

This sentence should be corrected to "...at significantly elevated concentrations from soil samples ~~SB8 from~~ at the Soterion area, the FSDA, and the BCP. and to a lesser extent in other samples across the site.". The following should be included in this Section; MCLs were exceeded for metals observed in the groundwater results for W03R, W14, W15, W20B, and W24.. Also, Metal concentrations were found to a lesser extent in other samples across the site. should be included in this Section.

S8-4,P8-3,@3-

The last two sentences in this paragraph should be re-written to accurately depict appearances of chromium at this site. Chromium has been detected at the FSDA and the BCP. Also, in the last sentence the statement to a "clear pattern" of contamination being supported by one soil boring is presumptuous. Further investigation into the possibility of a source from Soterion significantly impacting this site should be conducted during future investigations.

S8-4,P8-3,@5-

A drawing indicating the possible isoconcentration perimeters of this plume should be included in this document.



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S8-4, P8-3, @6, L2-

This sentence to be corrected to "Aromatic VOCs were not detected in the downgradient monitoring well or the upgradient private water wells in Blackhawk Acres Subdivision, but chromium was detected in IEPA well ~~nest~~ G108D.".

S8.5, P8-4, @1, L6-

This last sentence recommends a "reduced" set of analysis to be conducted for additional studies. This would not be acceptable because the source area has not been identified. Also, the migration pathway has not been defined. To "reduce" the parameters of this investigation would only reduce the capabilities of the parties involved to properly interpret the data obtained in future investigations. This would significantly reduce the ability of providing an accurate Feasibility Study to address the corrective action to be taken at this site to ensure that contamination is appropriately remediated. This statement should be deleted from this document. Since the data provided in this document did not produce adequate results in order to make logical conclusions with regards to the goals and objectives of the RI, it would seem reasonable to expand the parameters by which results will be obtained and analyzed for further investigation.

Table 4-1;

Parenthesis () should be included around the number "1" utilized for the note in this Table. No differentiation between the sample designation and the note can be clearly distinguished as presented in this data.

Table 4-3;

The "Property Owners" names are not required for this document. Because this document may become available to the public, it would be improper to present this information without the Owners permission. This section of the Table should be deleted.

Table 5-1;

There should be an explanation for two different testing methods being utilized for these results.



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Table 5-2;

There may be a need for explanation of the 2-foot variance between the apparent top of the staff gauge and the surface elevation. This variance may cause difficulty in assessing accurate correlation of measurement procedures and the results reported.

Table 6-2;

The results for W23B at 1:50 dilution factor appear to contradict the "J" note at the bottom of the Table. These results are significantly higher than the "5.0 ug/L" detection limits classifying a result as an estimated "J" notation. This should be clarified or corrected.

Table 6-7;

This table should have headings distinguishing the parameters reported. This table reports SVOCs, PCBs, and pesticides as well as VOCs. The results for G110-91 are not included in this table, but appear in the analytic results in Appendix I. This table should be corrected.

Table 6-8;

This table does not show the results of chromium for W108D. Also, there should be an asterisk provided for W24 under Cadmium (Cd) showing it exceeded the MCL.

Table 6-10;

PW03 is referenced as "908 Watts Ave.". This should be corrected to 908 Blackhawk Blvd.

Drawing F1-

The distinctive demarcation produced by this drawing for Soterion and Rockton Excavating is not necessary. There is no discussion or explanation as to why these two areas deserve prominence on this drawing. Such pronounced detail is not required to separate these two areas from any other area at this site. This drawing should be corrected to accurately depict the original intent of the drawing and not to bias one area from another.



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Drawing F4-

Utilization of W18 well log information for the geological cross-section in A-A' is not supported by information on surrounding well logs or borings. This discrepancy could lead to the conclusion that the drawing may not be an accurate depiction of the area for W18. Further investigation may have to be completed to disseminate the accuracy of this cross-section. Also refer to "Drawing F5, E-E'. Cross-section B-B' shows an interval under 441G which cannot be supported by the well log provided in Appendix D4, since description of soil types were not detailed until below the 86' level. This area cannot be accurately featured above the 86' mark on this cross-section.

Drawing F5-

The area around W18 should possibly be considered inaccurate. Refer to "Drawing F4, A-A' for discussion.

Drawing F4 & F5-

Discrepancies associated with the cross-sections should include the distance between and/or the absence of information at various depths restricting an accurate depiction of the lean clay layer and the lower geological features to be predicted with a high degree of accuracy. This is evident by the segmented lines between results accompanied by question marks. This should be an area of further investigation.

Drawing F6 & F7-

The accuracy of the method utilized to produce the equipotential contour lines provided on the water table maps should be scrutinized. The drawings cannot be accepted as accurate due to the large discrepancies between the water table levels provided and their position to the equipotential lines drawn. There appears to be an inability to draw an accurate water table map because of the lack of water table level measurements providing an adequate distribution for correlation across the site and the misinterpretation of the water table levels provided. This should be studied in future investigations. Further, there are downward vertical gradients documented in many well nests. Vertical gradients often cause misleading results when the data are plotted on two-dimensional groundwater flow maps. Given that the downward vertical gradient can be up two- to three- times greater than the horizontal gradient in the extreme cases, and typically



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can often be nearly as strong as the horizontal gradient, the effects of these vertical gradients are probably at least (if not more) important than the horizontal gradients. The results in Table 5-3 show a dramatic change in the vertical gradient over the period of one month (about 75% difference). This may suggest influences on this area are from unnatural mechanisms (i.e. pumping of a production well). Also, there is a question of the mechanisms dictating the unusual behavior of the Rock River as a recharging unit within this groundwater system. These should also be a subject of further investigation.

Discrepancies in results:

- W29, W24, WW16R should be questioned for utilization since the gamma ray logs have strong deflections and scale changes.
- The gamma ray log for W27 does not correlate with the boring log description.
- W28 boring log description does not show consistency with nearby boreholes SB16, SP2 and W7. Also, the boring log is inconsistent with the grain distribution data indicating GRAVEL.
- In cluster W8/W11/W8R/W11R the boring log description W11R is the only one which indicates GRAVEL as opposed to SAND with some gravel from 2' to 13'. The gamma ray log for W11R does not appear indicative of GRAVEL.

Comment Summary;

It appears that the significant mechanisms (both natural and unnatural) influencing this site were not adequately and/or accurately expounded within this document. The goals and objectives of the RI are to definitively describe the source (or sources) contaminating the groundwater, define the migration pathway(s), and provide data to support a risk assessment for the investigation.

The information presented in this Technical Memorandum appears to raise greater questions on validity concerning results and subsequent interpretations, than it does in providing answers to the RI goals and objectives. This document may be determined acceptable after the document has been modified to achieve a reasonable degree of confidence by the revisions, incorporation, and/or re-evaluations as set forth in the presented comments.



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Contamination in such a complex hydrogeological environment, may be influenced by circumstances not fully understood by today's scientific axioms. However, to ensure that an appropriate Feasibility Study can be secured providing an acceptable solution to remediate this area to the most satisfactory standard possible through modern technological methods, the RI must be completed with the highest degree of confidence.

Also, In order to achieve permissible ARARs that led to a competent remedial action, examination of sampling procedures and the media from which these samples are to be obtained may have to be re-assessed as to acceptability by current standards. This will be discussed in preparation for further sampling to be conducted in future investigations.